

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**LISTING OF CLAIMS:**

1. - 40. (Cancelled)

41. (Previously Presented) A method of forming a coated optical element, the method using a mould having first and second mould sections that will form front and back surfaces of the optical element, one of the mould sections having a casting face, the method including the steps of:
- (a) applying a first coating layer to cover the casting face of a mould section, the casting face being capable of imparting a desired optical configuration on a surface of the optical element, wherein the first coating layer is an abrasion resistant coating layer comprising polysiloxane resin;
  - (b) treating the first coating layer to prevent damage to the first coating layer during subsequent steps;
  - (c) applying a second coating layer to the first coating layer to substantially cover the first coating layer;
  - (d) treating the second coating layer to provide at least weak adhesion of the second coating layer to the first coating layer and to prevent damage to the second layer during subsequent steps;
  - (e) filling the mould with an organic liquid material; and

- (f) hardening the organic liquid material so as to form the optical element adhered to the second coating layer, wherein the second coating layer is an intermediate coating layer comprising a (meth)acryl silane, and wherein the (meth)acryl silane, the organic liquid material and the abrasion resistant coating layer co-react to form the coated optical element.
42. (Previously Presented) A method according to claim 41 wherein the first coating layer is applied to the casting face of the mould so as to completely cover the casting face.
43. (Previously Presented) A method according to claim 41 wherein the treatment of each coating layer is conducted to a degree wherein the coating layer forms a substantially insoluble dry film that exactly replicates the casting face of the mould in a substantially aberration-free manner.
44. (Previously Presented) A method according to claim 41 wherein the treatment is an at least partial cure.
45. (Previously Presented) A method according to claim 44 wherein the at least partial cure is conducted by exposing a coating layer to a temperature in the range of 35°C to 130°C for a duration in the range of one to thirty minutes.

46. (Previously Presented) A method according to claim 44 wherein at least one of the first or second coating layers contains an unsaturated monomer, and the coating layer is cured until it exhibits a degree of unsaturation in the range of 30% to 90% of the unsaturation it possessed prior to curing.
47. (Previously Presented) A method according to claim 44 wherein at least one of the first or second coating layers contains an unsaturated monomer, and the coating layer is cured until it exhibits a degree of unsaturation in the range of 55% to 70% of the unsaturation it possessed prior to curing.
48. (Previously Presented) A method according to claim 46 wherein the curing is initiated by a thermal initiator, or by activating radiation with an initiator, or by electron beam radiation.
49. (Previously Presented) A method according to claim 47 wherein the curing is initiated by a thermal initiator, or by activating radiation with an initiator, or by electron beam radiation.
50. (Previously Presented) A method according to claim 44 wherein the second coating layer is formed between the polysiloxane first coating layer and the organic liquid material.

51. (Previously Presented) A method according to claim 44 wherein the first coating layer contains partially hydrolysed and partially condensed functionized organosilane that is selected from the group consisting of glycidoxypolytrimethoxysilane, methacryloxypropyltrimethoxysilane, allyltrimethoxysilane, vinyltrimethoxysilane and mixtures thereof, and wherein a gelled network is formed through the polymerization of the organic component of the polysiloxane.
52. (Previously Presented) A method according to claim 51 wherein network formation via the organic component can be effected by (i) ring opening the glycidoxy portion of the glycidoxypolytrimethoxysilane using cationic initiators or curing catalysts, (ii) curing the ethylenic portion of the methacryloxypropyltrimethoxysilane, vinyltrimethoxysilane or allyltrimethoxysilane, or (iii) by using cationic or free radical initiators.
53. (Previously Presented) A method according to claim 41 wherein the treatment is the removal of solvent from a coating layer by the use of thermal energy to remove solvent and hydrolysis product therefrom with substantially no additional condensation occurring.
54. (Previously Presented) A method according to claim 41 wherein the second coating layer is between, adjacent to and adhered to the organic liquid material and the polysiloxane first coating layer.

55. (Previously Presented) A method according to claim 41 wherein the method includes the further step of a thermal post-cure cycle after the hardening of the organic liquid material.
56. (Previously Presented) A method according to claim 55 wherein the thermal post-cure cycle is sufficient to ensure essentially complete curing of the coating layers.
57. (Previously Presented) A method according to claim 55 wherein the thermal post-cure cycle includes heating to a temperature in the range of 90 to 120°C for a period of up to 4 hours to substantially fully condense the polysiloxane first coating layer.
58. - 80. (Cancelled)
81. (Cancelled)
82. (Cancelled)
83. (Previously Presented) A method according to claim 41 wherein the optical element is subjected to subsequent treatment.
84. (Previously Presented) A method according to claim 41 wherein the optical element is subsequently coated with further coating layers.

85. (Previously Presented) A method according to claim 84 wherein the further coating layers are selected from the group comprising a hydrophobic layer, an oleophobic layer and an anti-reflection stack of layers.
86. (Previously Presented) A method according to claim 41 wherein the adhesion of coating layers to a mould surface is assisted by a surface modification of the mould surface, such surface modification being in the form of a silane treatment or a fluorochemical treatment.
87. (Previously Presented) A method according to claims 41 wherein the adhesion of coating layers to a mould surface is assisted by the addition of mould release agents or adhesion promoters to the first or second coating layers.
88. (Previously Presented) A method according to claim 41 wherein hardening the organic liquid material step comprises co-reacting the second coating layer between and in contact with the first coating layer and the organic liquid material.
89. (Previously Presented) A method according to claim 88 wherein the intermediate coating layer contains an amount of (meth)acryl silane in the range of from 30% to 100% by weight.

90. (Previously Presented) A method according to claim 41 wherein the intermediate coating layer contains an amount of (meth)acryl silane in the range of from 50% to 90% by weight.
91. (Previously Presented) A method according to claim 41 wherein the (meth)acryl silane is methacryloxypropyltrimethoxysilane.
92. (Previously Presented) A method according to claim 41, wherein the organic liquid material comprises acrylate lens material.
93. (Previously Presented) A method according to claim 41 wherein one or more of the coating layers is an abrasion resistant coating layer having a thickness in the range of 0.5  $\mu\text{m}$  to 50  $\mu\text{m}$ .
94. (Previously Presented) A method according to claim 93 wherein the thickness of the abrasion resistant coating layer is in the range of 1  $\mu\text{m}$  to 5  $\mu\text{m}$ .
95. (Cancelled)
96. (Cancelled)

97. (Previously Presented) A method according to claim 41 wherein the second coating layer acts as an adhesion promoter between the first coating layer and the organic liquid material, and has a thickness in the range of 0.05  $\mu\text{m}$  to 50  $\mu\text{m}$ .
98. (Previously Presented) A method according to claim 97 wherein the second coating layer is in the range of 0.2  $\mu\text{m}$  to 1  $\mu\text{m}$ .
99. (Previously Presented) A method according to claim 41 wherein an anti-reflection stack of layers is coated over the optical element, the stack cumulatively having a thickness in the range of 0.5  $\mu\text{m}$  to 20  $\mu\text{m}$ .
100. (Previously Presented) A method according to claim 99 wherein the stack cumulatively has a thickness in the range of 1.5  $\mu\text{m}$  to 5  $\mu\text{m}$ .
101. (Previously Presented) A method according to claim 99 wherein the layers in the stack include alternate high and low refractive index layers.
102. (Previously Presented) A method according to claim 41 wherein particulate fillers are added to at least one of the first or second coating layers to modify the refractive index of the coating layer without changing the chemistry of the coating formulation, the average diameter of particles in the filler being in the range of 10 nm to 80 nm diameter.



103. (Previously Presented) A process for the manufacture of an ophthalmic lens, the process including as a part thereof a method in accordance with claim 41.
104. (Previously Presented) A method of forming a coated optical element, the method using a mould having first and second mould sections that will form front and back surfaces of the optical element, one of the mould sections having a casting face, the method including the steps of:
- (a) applying a first coating layer to cover the casting face of a mould section, the casting face being capable of imparting a desired optical configuration on a surface of the optical element;
  - (b) treating the first coating layer to prevent damage to the first coating layer during subsequent steps;
  - (c) applying a second coating layer to the first coating layer to substantially cover the first coating layer;
  - (d) treating the second coating layer to provide at least weak adhesion of the second coating layer to the first coating layer and to prevent damage to the second layer during subsequent steps;
  - (e) filling the mould with an organic liquid material; and
  - (f) hardening the organic liquid material so as to form the optical element adhered to the second coating layer, wherein the hardening comprises co-reacting the second coating layer, the organic liquid material and the first coating layer, and wherein the second coating layer is between and in contact with the organic liquid material and the first coating layer to

provide adhesion between the organic liquid material and the first coating layer.

105. (Previously Presented) A method according to claim 104 wherein the organic liquid material comprises an acrylate and the first coating layer comprises polysiloxane.
106. (Previously Presented) A method according to claim 104 wherein the second coating layer comprises a (meth)acryl silane.
107. (New) A method of forming a coated ophthalmic lens, the method using a mould having first and second mould sections that will form front and back surfaces of the ophthalmic lens, one of the mould sections having a casting face, the method including the steps of:
  - (a) applying a first coating layer to cover the casting face of a mould section, the casting face being capable of imparting a desired optical configuration on a surface of the ophthalmic lens, wherein the first coating layer is an abrasion resistant coating layer comprising polysiloxane resin;
  - (b) treating the first coating layer to prevent damage to the first coating layer during subsequent steps;
  - (c) applying a second coating layer to the first coating layer to substantially cover the first coating layer;

- (d) treating the second coating layer to provide at least weak adhesion of the second coating layer to the first coating layer and to prevent damage to the second layer during subsequent steps;
- (e) filling the mould with an organic liquid material comprising an acrylate;  
and
- (f) hardening the organic liquid material so as to form the optical element adhered to the second coating layer, wherein the second coating layer is an intermediate coating layer comprising a (meth)acryl silane, and wherein the (meth)acryl silane, the organic liquid material and the abrasion resistant coating layer co-react to form the coated ophthalmic lens.